

CA2ALA 75

B22

1970 c.2

LIBRARY
VAULT 19

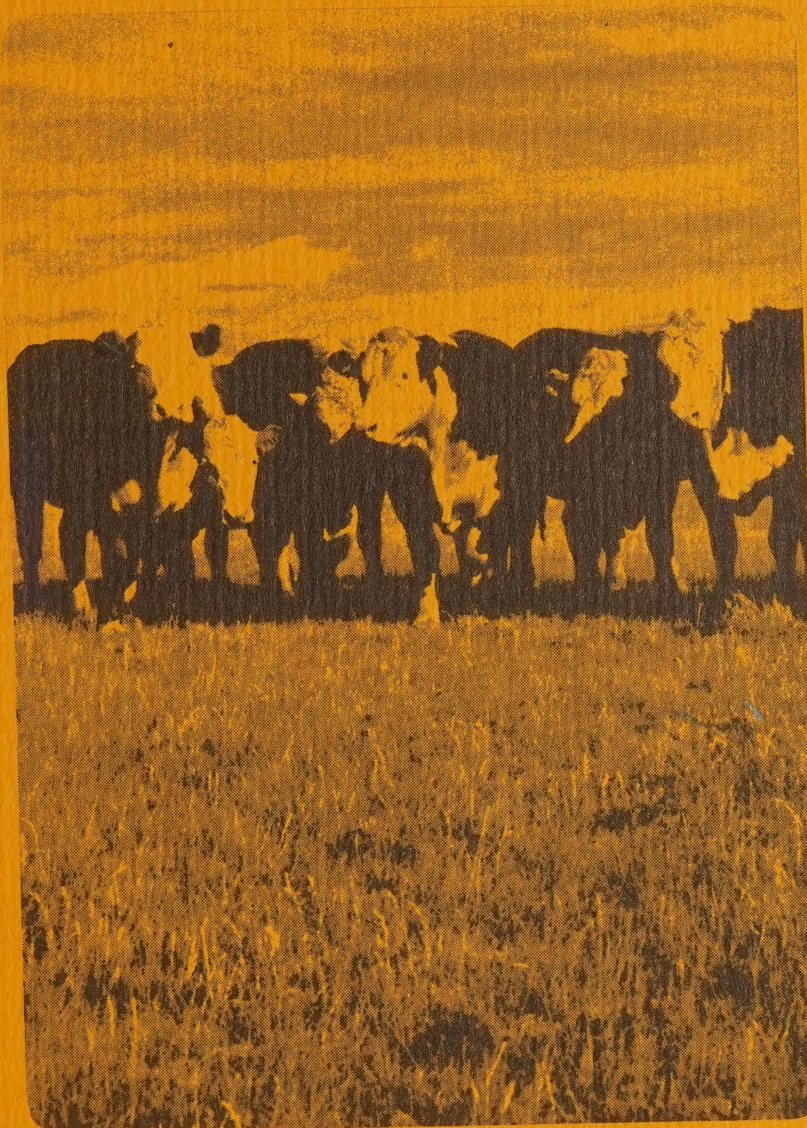
c.2

3M-12-71

ALBERTA LEGISLATURE LIBRARY



3 3398 00473 4702



BEEF-FEEDER ENTERPRISE ANALYSIS

ECONOMICS DIVISION • ALBERTA DEPARTMENT OF AGRICULTURE

Production

Branch

1970

Digitized by the Internet Archive
in 2022 with funding from

Legislative Assembly of Alberta - Alberta Legislature Library

1970
ALBERTA
BEEF FEEDER ENTERPRISE

by

W. G. KIRK
AGRICULTURAL ECONOMIST
PRODUCTION ECONOMICS BRANCH

ECONOMICS DIVISION

ALBERTA DEPARTMENT OF AGRICULTURE

MINISTER
Hugh M. Horner

DEPUTY MINISTER
Dr. G. Purnell

TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
General Conditions	1
Price Margins	3
1970 Beef Feeder Enterprise Analysis	3
Returns	4
Costs	4
Size of Output Comparison	6
Returns	6
Costs	6
Feeding Operation With and Without Pasture	8
Management Factors Affecting Returns	8
Definitions	10

LIST OF TABLES

Table 1	Average Monthly Prices	2
Table 2	Costs and Returns Per Hundredweight Live Weight Gain	5
Table 3	Enterprise Size	7
Table 4	Feeding Operations With and Without Pasture	9
Table 5	Management Factors	10

LIST OF FIGURES

Figure 1	Price Margins	2
----------	---------------	---

Digitized by the Internet Archive
in 2022 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

INTRODUCTION

This report has been prepared to provide interested persons with the costs and returns that were encountered during 1970 by beef feeder operations that participated in the Alberta Farm Business Analysis Program.

It should be noted that the farms included in this study are not necessarily representative of all beef feeder enterprises in Alberta but the costs and returns in this report can be used by individuals to make comparisons with their own operations, or as a guideline for persons planning a similar enterprise.

GENERAL CONDITIONS

During 1970, a strong demand for beef and the holdback of cows and heifers for breeding purposes kept fat cattle prices at a high level. An indication of the expansion Alberta's beef industry experienced in 1970 is the number of choice and good steers slaughtered at Federally Inspected Packing Plants in Alberta. In 1969, 618,947 head were slaughtered compared to 683,014 head for 1970 which represents a 10 percent increase.

Low feed grain prices, combined with relatively high fat cattle prices further stimulated the trend towards finishing a greater percentage of feeder cattle in Alberta rather than exporting them. Brand inspection records show that only 181,010 head of live cattle and calves were shipped out of Alberta in 1970 compared to 257,677 head in 1969.

In times of restricted grain quotas and low feed grain prices, there is greater interest in obtaining feeder cattle to be used as an alternative method for marketing feed grain. Under these conditions feeder prices rise and large negative price margins may be encountered. Figure 1 further explains the price margins encountered in 1970.

Table 1

AVERAGE MONTHLY PRICES FOR GOOD FEEDER STEERS
AND CHOICE STEERS AT CALGARY

Good Feeder Prices

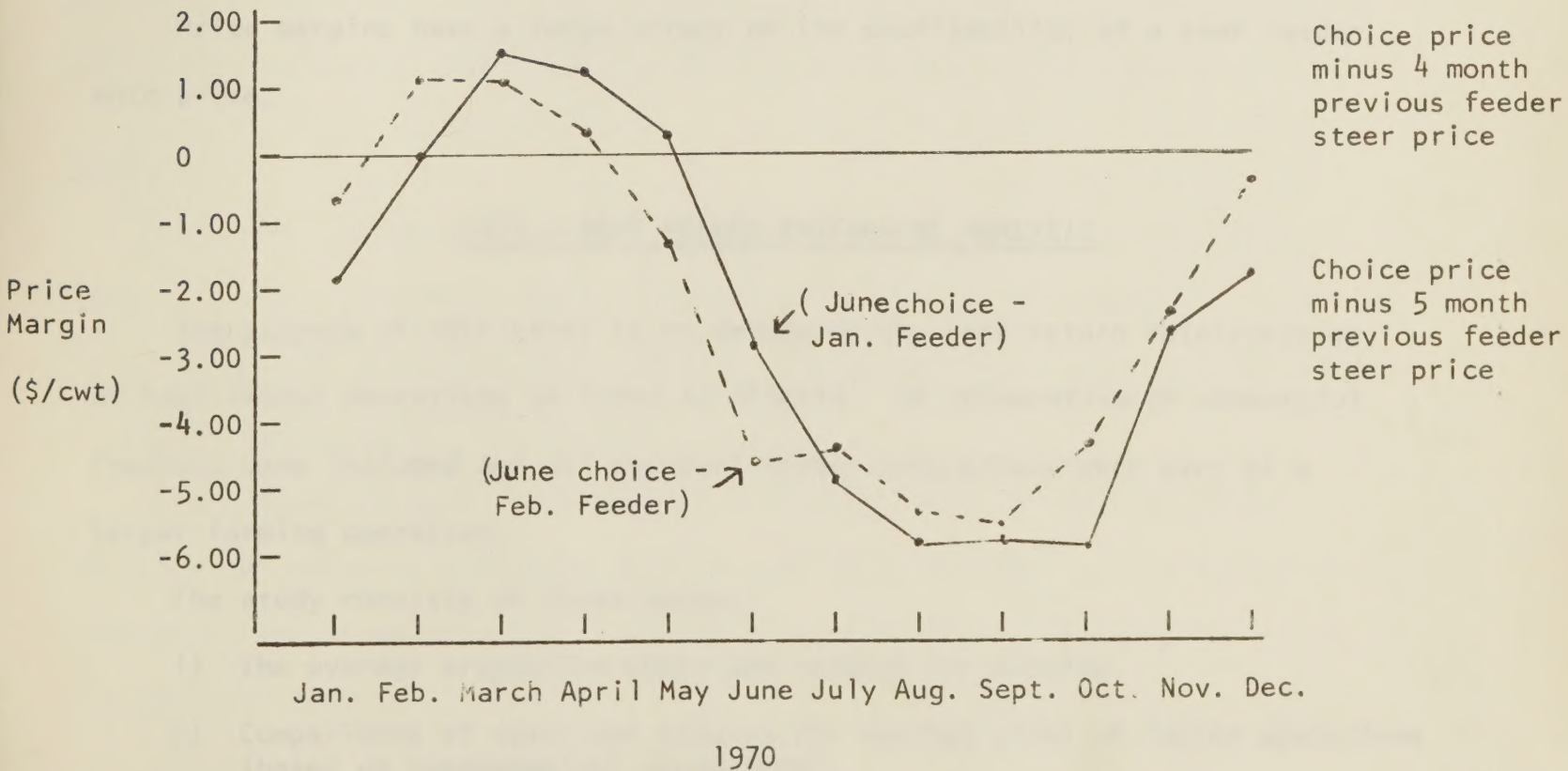
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1969							34.37	31.90	30.83	29.78	30.33	31.35
1970	33.13	34.77	34.47	33.97	33.87	32.17	31.82	30.46	30.09	30.64	32.84	32.31

Choice Steer Prices

1970	29.99	30.84	31.53	31.87	31.79	30.24	30.05	28.82	28.28	27.92	29.56	30.02
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Figure 1

1970 PRICE MARGINS BETWEEN CHOICE STEERS
AND GOOD FEEDER STEERS AT CALGARY



PRICE MARGIN

The price margin refers to the difference between the price per pound received for finished cattle and the price per pound paid for the cattle as feeders. The price margin (selling price - buying price) can be positive or negative as illustrated by figure 1.

As prices vary from month to month, the length of time between the purchase of the feeder steers and their sale as finished steers affects the price margin. Figure 1 shows the price margins between choice steers and good feeder cattle at Calgary during 1970, where the good feeder steer prices are the prices that would have been paid four and five months previous to the month the choice steers were sold in. For example, the price margin between choice steers sold in June, 1970, (\$30.05/cwt.) and the five month previous (Jan., 1970, \$33.13/cwt.) price for good feeder steers is a negative \$3.08/cwt.

Price margins have a large effect on the profitability of a beef feeder enterprise.

1970 - BEEF FEEDER ENTERPRISE ANALYSIS

The purpose of this study is to determine the cost-return relationships of beef feeder operations on farms in Alberta. No cooperative or commercial feedlots were included and all the beef feeder enterprises were part of a larger farming operation.

The study consists of three parts:

- 1) The average production costs and returns for Alberta.
- 2) Comparisons of costs and returns for various sizes of feeder operations (based on hundredweight production).
- 3) Comparison of feeder operations with and without pasture.

Average Production Costs & Returns

Returns

The value of production^{1/} for a cattle feeding enterprise is affected by many factors, the most important of which is the price margin.

The difference between the buying and selling price can often determine whether or not the enterprise is profitable. Other factors that can affect the value of production are death loss, rate of gain and the value that is assigned to the cattle on inventory at the beginning and end of the year.

The value of production in 1970 was \$25.20 per cwt. produced which was similar to the figure for 1969.

Returns over variable costs (excluding labour) amounted to \$9.47 per cwt., up from \$7.88 for 1969. On an enterprise basis this amounted to about \$4,700 per farm which in the short run could be used for paying hired labour, paying off the investment in the feeder enterprise or paying living expenses.

Costs

Feed costs which made up 54% of the total costs were down from 1969. Lower grain and supplement costs accounted for most of the decrease. Other variable costs^{2/} were also slightly less, giving total variable costs of \$15.73 in 1970 compared to \$17.14 in 1969.

Fixed costs per cwt. produced were slightly higher in 1970 at \$5.80 while labour costs were similar at \$2.72 and \$2.75 for 1969 and 1970 respectively. This gave total production costs of \$24.28 per cwt. for 1970 compared to \$25.26 per cwt. for 1969.

^{1/} See definitions, page 11

^{2/} See definitions, page 10

Table 2 COSTS AND RETURNS PER HUNDRED POUNDS LIVE WEIGHT

	<u>1970</u>	<u>1969</u>
Number of Farms	66	<u>58</u>
Average Production Per Farm (cwt.)	497	435
Value of Production/cwt	\$25.20	\$25.02
<u>COSTS</u>		
Grain (588 lb)	7.95	8.54
Mineral, Supp. & Complete Feed (93 lb)	1.54	2.11
Roughage (349 lb)	3.06	3.11
Pasture (.22 AUM)	<u>.65</u>	<u>.52</u>
TOTAL FEED	\$13.20	\$14.28
Vet and Medicine	.37	.26
Other Variable	<u>2.16</u>	<u>2.60</u>
TOTAL VARIABLE (excluding labour)	\$15.73	\$17.14
Utilities & Overhead	.60	} 5.40 ^{1/}
Depreciation	1.15	
Interest on Investment (7%)	<u>4.05</u>	
TOTAL FIXED COSTS	\$ 5.80	\$ 5.40
Total Labour (1.67 hr)	<u>\$ 2.75</u>	<u>\$ 2.72</u>
TOTAL PRODUCTION COSTS	\$24.28	\$25.26
<u>RETURNS</u>		
Returns Over Variable Costs (Excluding Labour)	\$ 9.47	\$ 7.88
Returns to Labour, Mgmt., & Invest.	\$ 7.72	\$ 6.77
INVESTMENT PER CWT. PRODUCTION		
Building & Equipment	\$13.67	} \$52.56
Livestock & Supplies	\$44.13	

^{1/} In 1969, interest on investment was charged at 6% for buildings, 7% for machinery and 8% for livestock. This figure also includes utilities, overhead expenses and depreciation on buildings and machinery.

SIZE COMPARISON

Table 3 shows the costs and returns for various sizes of operations based on hundredweight production. The beef-feeder operations were divided into four groups that minimized the variation in production costs within each group. This was done so the average of each group would more closely represent the production costs of the operations in the group.

The four groups chosen were Group A (less than 100 cwt. production), Group B (100-199 cwt. production), Group C (200-499 cwt. production) and Group D (greater than 500 cwt. production).

The value of production varied from \$27.17 for Group A to \$22.65 for Group C. No definite reason for this variation can be given. A possible explanation for this is the varying margins between buying and selling prices at different times of the year, as the larger enterprises fed their animals to heavier weights. Another possibility would be the variation between farms in assigning beginning and ending inventory values to the cattle.

Returns over variable costs were \$3.57, \$7.95, \$6.61 and \$10.28 for groups A, B, C, and D respectively. The higher returns for the larger enterprises suggests that they had lower costs which is illustrated by Table 3.

Feed costs per cwt. live weight gain decreased from \$18.08 for Group A to \$12.81 for Group D. The lower feed cost was a result of less roughage and less total feed being fed per cwt. of production by the larger operations.

Both fixed costs per cwt. and labour costs per cwt. decreased with enterprise size indicating the larger operations were making more efficient use of their capital and labour.

The combination of lower feed, fixed and labour costs per cwt. allowed Group D to have total production costs of \$22.32 per cwt. as compared to \$40.62 per cwt. for Group A.

Table 3

ENTERPRISE SIZE

COSTS AND RETURNS PER HUNDRED POUNDS LIVE WEIGHT GAIN

	<u>Group A</u> <u>Less than 100 cwt.</u>	<u>Group B</u> <u>100-199 cwt.</u>	<u>Group C</u> <u>200-499 cwt.</u>	<u>Group D</u> <u>500 + cwt.</u>
Number of Farms	19	16	11	20
Enterprise Production (cwt)	66	145	320	1,286
Value of Production/cwt	\$27.17	\$26.01	\$22.65	\$25.38
<u>COSTS</u>				
Grain & Complete Feed (753 lb)	10.68	(607 lb) 7.81	(593 lb) 8.36	(613 lb) 8.49
Mineral & Supplement	.58	1.11	1.25	.94
Roughage (765 lb)	6.46	(595 lb) 5.19	(283 lb) 2.77	(315 lb) 2.75
Pasture (.27AUM)	<u>.36</u>	(.26AUM) <u>.63</u>	(.29AUM) <u>.96</u>	(.20AUM) <u>.63</u>
TOTAL FEED COST	\$18.08	\$14.74	\$13.34	\$12.81
Vet & Medicine	.33	.36	.32	.38
Other Variable Costs	<u>5.19</u>	<u>2.96</u>	<u>2.38</u>	<u>1.91</u>
TOTAL VARIABLE COSTS (Excl. Lab.)	\$23.60	\$18.06	\$16.04	\$15.10
Utilities & Overhead Costs	1.37	.72	.74	.53
Depreciation	2.37	1.45	1.04	1.08
Interest - Buildings & Equipment 7%	1.73	1.21	.83	.92
Interest - Livestock & Supplies 7%	<u>4.95</u>	<u>4.16</u>	<u>2.83</u>	<u>2.93</u>
TOTAL FIXED COSTS	\$10.42	\$ 7.54	\$ 5.44	\$ 5.46
Total Labour (4.04 hr)	<u>6.60</u>	(3.21 hr) <u>5.46</u>	(1.8 hr) <u>3.18</u>	(1.39 hr) <u>2.26</u>
TOTAL PRODUCTION COST	\$40.62	\$31.06	\$24.66	\$22.82
<u>RETURNS</u>				
Return Over Variable Costs	\$ 3.57	\$ 7.95	\$ 6.61	\$10.28
Returns to Labour, Mgmt. & Invest.	\$ -.17	\$ 5.78	\$ 4.83	\$ 8.67
<u>\$ Investment Per Cwt. Production</u>				
Buildings & Equipment	\$24.75	\$17.17	\$11.86	\$ 9.33
Livestock & Supplies	\$70.70	\$59.48	\$40.55	\$41.94

FEEDING OPERATIONS WITH AND WITHOUT PASTURE

Two distinct feeding methods were used by the operations included in this study in 1970. One involved the use of some pasture, while the other used only drylot feeding.

In comparing the two, (see Table 4), it was found that operations using pasture were generally larger than the drylot operations. In 1970, the feed costs per cwt. produced for the pasture operations were slightly higher than the drylot operations although total variable costs were very similar.

Fixed costs per cwt. were lower for the pasture operations; \$5.47 per cwt. produced as compared to \$6.21 per cwt. produced for the drylot operations.

Labour costs for the two systems were similar giving total production costs of \$23.97 per cwt. for the pasture operations as compared to \$24.69 per cwt. for those using the drylot system. The slightly lower production cost for the pasture operations was due to lower fixed costs per cwt. produced which was due in part to a lower investment in building and equipment per cwt. The larger size of the pasture operation would also tend to decrease the fixed costs per cwt. as illustrated by Table 3.

MANAGEMENT FACTORS AFFECTING RETURNS

The returns from a beef-feeder enterprise may be affected by a number of management factors. These include:

- 1) Capital Use (\$ invested per cwt. beef produced)
- 2) Feed Cost per Hundredweight of feed.
- 3) Feeding Efficiency (Lbs. fed per lb. live weight gain)
- 4) Labour Efficiency (Hours labour per hundredweight beef produced)
- 5) Value of Production per 100 Lbs. Live Weight Gain

Table 4

FEEDING OPERATIONS WITH AND WITHOUT PASTURE
COSTS AND RETURNS PER HUNDREDWEIGHT PRODUCED

	<u>With Pasture</u>	<u>Without Pasture</u>
Number of Farms	28	38
Enterprise Production (cwt.)	672	368
Value of Production/cwt	\$24.48	\$26.16
<u>COSTS</u>		
Grain and Complete Feed	(573 lb) 8.47	(673 lb) 8.59
Mineral and Supplement	.97	.98
Roughage	(332 lb) 2.94	(384 lb) 3.31
Pasture	(.36AUM) <u>1.06</u>	<u>-</u>
TOTAL FEED COST	\$13.44	\$12.88
Vet. & Medicine	.39	.33
Other Variable Costs	<u>1.86</u>	<u>2.57</u>
TOTAL VARIABLE COSTS (Excl. Lab.)	\$15.69	\$15.78
Utilities and Overhead	.64	.53
Depreciation	1.00	1.34
Interest - Buildings & Equipment	.83	1.14
Interest - Livestock & Supplies	<u>3.02</u>	<u>3.20</u>
TOTAL FIXED COSTS	\$ 5.49	\$ 6.21
Labour Cost	(1.66 hrs) <u>\$ 2.79</u>	(1.68 hrs) <u>\$ 2.70</u>
TOTAL PRODUCTION COST	\$23.97	\$24.69
<u>RETURNS</u>		
Return Over Variable (Excl. Lab.)	\$ 8.79	\$10.38
Return to Labour, Mgmt., & Invest.	\$ 7.15	\$ 8.51
<u>Investment</u>		
Buildings and Machinery	\$11.81	\$16.18
Livestock and Supplies	\$43.03	\$45.61

To illustrate the effect of these factors on returns, the average value for each factor appears in Table 5 under Average All Farms. With this are the values of the management factors for each of the size groups. From the table it appears that to be above average in 1 or 2 factors but below average in the rest is not as profitable as being efficient in all factors, as was the case with the +500 cwt. group.

Table 5

MANAGEMENT FACTORS AFFECTING RETURNS

<u>Management Factors</u>	<u>Less Than 100 Cwt.</u>	<u>100-199 Cwt.</u>	<u>200-499 Cwt.</u>	<u>+500 Cwt.</u>	<u>Average All Farms</u>
Capital Use	\$95.44	\$65.25	\$52.41	\$31.67	\$57.80
Feed Cost per Cwt.	\$ 1.18	\$ 1.19	\$ 1.48	\$ 1.27	\$ 1.28
Feed Efficiency	15.3:1	12.2:1	9.0:1	10.1:1	10.3:1
Labour Efficiency	4.04 hr	3.21 hr	1.81 hr	1.39 hr	1.67 hr
Value of Production	\$27.17	\$26.01	\$22.65	\$25.38	\$25.20
Return to Labour, Mgmt., & Invest./cwt.	\$ -.17	\$ 5.76	\$ 4.84	\$ 8.67	\$ 7.73

DEFINITIONS

AUM - (Animal Unit Month) - For this study, an AUM is defined as the amount of pasture required to supply 1 1/2 beef feeders their nutritional requirements for one month.

Depreciation - The loss in value of an asset due to wear, tear and obsolescence.

Other Variable Costs - For this study other variable costs included bedding straw, hauling and commission fees, machine operating costs and building repair costs.

Fixed Costs - Costs that will be incurred during the year, regardless of the level of production. This would include utilities and overhead costs, depreciation and interest on capital invested in the enterprise.

Total Production Costs - All variable, fixed and labour costs.

Value of Production - This is the increase in value of the beef feeder enterprise during the year. It is calculated in the following manner:

$$\begin{aligned} & \text{Ending Inventory Value of Livestock} \\ & + \text{Livestock Sales} \\ & + \text{Value of Livestock Transferred Out of Beef Feeder Enterprise} \\ & + \text{Value of Livestock on Farm} \\ & - \text{Livestock Purchased} \\ & - \text{Value of Livestock Transferred into Beef Feeder Enterprise} \\ & - \text{Beginning Inventory Value of Livestock} \\ & = \text{Value of Production} \end{aligned}$$

Variable Costs - Costs that vary directly with the level of output (eg. feed costs, equipment operating costs and marketing costs).

Returns Over Variable Costs (Excluding Labour) - These are the returns that are left after subtracting all the variable costs except labour from the value of production.

Returns to Labour, Management and Investment - The returns left after all variable costs (except labour), depreciation and overhead costs have been removed from the value of production.

ASSUMED VALUES

1) Home grown feed was priced at estimated market value which would be the value the operator could have received if he had sold the feed off his farm.

2) Repair costs, depreciation and interest on investment for buildings and machinery were all allocated in the proportion they were used by the beef feeder enterprise.

3) Interest at 7% was charged on the capital invested in the beef feeder enterprise.

